

Water Use

Why is this important?

Potable water is a limited and dwindling natural resource, both locally and globally. Redwood City's contracted "Supply Assurance" from the San Francisco Public Utility Commission (SFPUC) is 3,978 million gallons per year (or 10.9 million gallons per day).⁷ However, the City consistently exceeded this ensured supply by an average of 237 million gallons per year between 1998 and 2008, as shown in Table 4. For the past ten years, this additional water has been purchased from the SFPUC as needed, but its price is likely to increase in the future, and the City has no assurance that it will continue to be available. Water conservation and efficiency efforts in Redwood City are occurring against a state-wide backdrop of increased demand for water and decreased supply due to many seasons of drought and decreased snowpack in the Sierra Nevada mountains, which will likely be exacerbated in the future by climate change. In response to these issues, the City Council has adopted a goal of eliminating its water supply deficit by 2010.⁸ Due in large part to a great increase in recycled water use – described below – as well as through increased conservation, efficiency, incentive and rebate programs, the City is on pace to meet this goal.

Defining Sustainability

A sustainable level of water use does not exceed supply levels.

Indicator Results

Total Gallons of Potable Water Used per Year and per Water Connection

Since 2001, the City has instituted various water conservation efforts, including incentives and rebates, free conservation devices, one-on-one residential conservation consultations, site water use analysis, and education and public outreach to increase water efficiency in homes, businesses, and institutions. The following are the major trends in measured water use:

- The number of active water connections in the city has consistently increased every year since 1998/1999, and total water connections increased by 4,230 from 1999 to 2008. This is primarily a result of more single-family residential connections, which over the same period increased from 14,325 (76.0% of all connections) to 18,584 (80.6% of all connections).
- Nonetheless, total water used per year from 1998/1999 to 2007/2008 has remained relatively stable, meaning the average gallons used per water connection has decreased and total gallons used has remained stable.

⁷ Redwood City Urban Water Management Plan.

⁸ *Ibid.*

Table 4: Total Gallons of Potable Water Used and Active Water Connections

Year	Total Gallons Used	Active Water Connections	Gallons Used Per Active Water Connection
1998/1999	4,168 million	18,840	221,232
1999/2000	4,324 million	19,477	222,026
2000/2001	4,299 million	20,048	214,419
2001/2002	4,248 million	20,719	205,021
2002/2003	4,160 million	21,360	194,765
2003/2004	4,449 million	21,974	202,446
2004/2005	4,057 million	22,567	179,786
2005/2006	3,971 million	22,932	173,173
2006/2007	4,259 million	23,046	184,815
2007/2008	4,272 million	23,070	185,187
10-Year Average	4,215 million	21,403	196,932

Source: Redwood City Public Works, 2008

Total Gallons of Water Recycled and Used per Year

Redwood City’s water recycling program, where treated, re-claimed water replaces first-use potable water for certain uses, is a major component of its conservation efforts. The City obtains its recycled water from the South Bayside System Authority’s sub-regional wastewater facility, of which it is a part owner. Highlights of the City’s water recycling efforts include:

- The City is projected to recycle 184 million gallons of water in 2008, which is 3.5 times the amount recycled in 2007. The City did not recycle any water in 2006.
- The 184 million gallons of water recycled in 2008 will offset about 70% of the 266 million gallons by which the City annually exceeds its SFPUC Supply Assurance.
- When fully developed, the recycled water system is projected to deliver approximately 456 million gallons per year (1,398 acre feet per year) to customers in the City, more than offsetting the amount by which the City exceeds its Supply Assurance. The recycled water system is expected to be fully developed within the time horizon covered by the new Redwood City General Plan.
- On July 7th, 2008, the City adopted an ordinance encouraging and in many cases requiring the use of recycled water and dual plumbing, and defining the conditions for which they are suitable.

Table 5: Gallons of Recycled Water Used

Year	Gallons of Recycled Water
2006	0
2007	50 million
2008	184 million (estimated)

Source: City of Redwood City, 2008

Total Gallons of Water Used per Year for Large Landscape Projects

So-called “large landscape projects,” such as parks, homeowner associations sites, golf courses, cemeteries, and other large private or public landscaping sites, use a significant portion of Redwood City’s SFPUC Supply Assurance. They can also be well-suited to use recycled water. As part of the city’s ongoing water conservation efforts, it has instituted a Large Landscape

Conservation Program, which actively works with property owners and municipal property managers to implement water conservation measures. Indicator results and highlights are as follows:

- Large landscape projects used 537 million gallons of water in FY 2007-2008.
- When surveyed in 2006, the City's Large Landscape Conservation Program had achieved water use reductions at 66 of 75 homeowner association sites and 22 of 28 City park sites.
- Between 2002 and 2006, the Large Landscape Conservation Program is estimated to have reduced the annual amount of water used for large landscape projects by 177 million gallons, or 543 acre feet (annual reduction).
- Despite reductions achieved by the Large Landscape Conservation Program, large landscape projects still accounted for about 25% of Redwood City's overall potable water use in FY 2007-2008 (537 million gallons out of a total of 4,272 million gallons, as shown in Table 4).

Summary of Results

Currently, Redwood City annually exceeds its Supply Assurance from the San Francisco Public Utilities Commission, and has therefore been seeking ways to reduce its water use. The City's quickly expanding water recycling program is likely to eliminate the Supply Assurance deficit in the near future, and reductions in large landscape water use and in water used per water customer in the City are also contributing to reduced water use. However, in the long-term, full build-out of the existing General Plan could result in another Supply Assurance deficit, and a limited water supply is a primary limiter on potential development in the City. Mixed use and multi-family development tends to use less water than single family development, so encouraging these uses in place of single family will reduce the City's overall demand for water.

Potential Policy Responses

- Expand the recycled water service area.
- Continue the City's various conservation programs.
- Continue to expand the Large Landscape Conservation Program.
- Encourage water conservation by single family residential users, which have contributed the most to the increase in active water connections over the past 10 years.